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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,893	09/06/2005	David E Lowery	PHRM0002-105	8487

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EXAMINER
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ULM, JOHN D

ART UNIT	PAPER NUMBER
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1649

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/523,893	Applicant(s) LOWERY ET AL.	
	Examiner John D. Ulm	Art Unit 1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-48 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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Claims 1 to 48 are pending in the instant application.

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 1 to 4 and 15 to 33, drawn to a binding assay employing a DmGPCR and DmGPCR binding partner.

Group II, claims 5 to 9 and 34 to 43, only in so far as they relate to a method of controlling insects by administering a DmGPCR binding partner.

Group III, claims 5 to 9 and 34 to 43, only in so far as they relate to a method of controlling insects by administering a DmGPCR polynucleotide modulator

Group IV, claims 5 to 9 and 34 to 43, only in so far as they relate to a method of controlling insects by administering a DmGPCR polypeptide modulator.

Group V, claims 10 to 14 and 44 to 48, drawn to a method of treating a subject by administering a DmGPCR binding partner.

The inventions listed as Groups I to V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The methods of inventions I to V do not reflect a common inventive concept because they have different modes of operation to achieve materially different objectives and because they do not

employ a common compound, combination of compounds or class of compounds that distinguishes the claimed methods, as a group, from the prior art..

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

Page 7 of the instant specification discloses a plurality of patentably distinct species of "purified and isolated DmGPCR polypeptides comprising the amino acid sequence set forth in any of SEQ ID N0s: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, or 24". These twelve different species do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features. These species of insect receptor proteins lack a common feature or combination of features that distinguishes them as a group from related compounds of the prior art. Insect GPCRs were well known in the prior art as shown by the text bridging pages 3 and 4 of the instant specification

Page 12 of the instant specification discloses a plurality of patentably distinct species of binding partners that

"may be, for example, a drotachykinin, a leucoldnin, or an allatostatin-c". The drotachykinin (DTK) may be, for example, DTK-I (SBQ ID NO: 169), Met8-DTK-2 (SEQ ID NO: 170), DTK-2 (SEQ ID NO:171), DTK-3 (SEQ ID NO: 172), DTIG4 (SEQ ID NO: 173), and DTK-5 (SEQ ID NO: 174). The leucoldnin (LK) may be, for example, LK-I (SEQ ID NO: 175) LK-V (SEQ ID NO: 176), LK-W (SEQ ID NO: 177), and LK-VIU (SEQ ID NO:178), Culelirin (SEQ ID NO: 179), mollusc leucoldnin-like peptide, lymnokinin (PSFHSWSM (SEQ ID NO: 180), and Drosophila leucokin-like peptides DLK-I (NSVVLGKKQRFHSWGa) (SEQ ID NO: 181), DLK-2 (PGIU-RFHWSGM (SEQ ID NO: 182) and DLK-ZA (QRFHSWGa) (SEQ ID NO; 183).

The allatostatin (AST) maybe, for example, AST-C (SEQ ID NO: 184), or DST-C (SEQ ID NO: 185). Other binding partners include, without limitation, SEQ ID NO: 186 and SEQ ID NO: 187.'

These species also lack unity of invention because they lack a common feature or combination of features that distinguishes them as a group from related compounds of the prior art. The text on page 5 of the instant specification shows that the "DmGPCR binding partner" compounds drotachykinin and leucoldrin, for example, were well known in the art prior to the instant invention.

Applicant is required, in reply to this action, to elect a single disclosed species (SEQ ID NO:) of DmGPCR polypeptide and/or a single disclosed species (SEQ ID NO:) of binding partner where appropriate, to which the claims shall be restricted if no generic claim is finally held to be allowable. For example, if Group I, II or V is chosen, Applicant needs to elect a species of DmGPCR and a species of binding partner. If Group III or IV is chosen, Applicant only needs to elect a species of DmGPCR. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

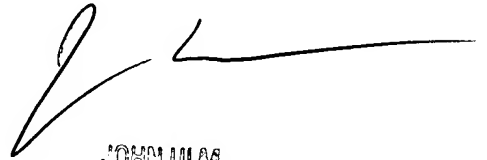
Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John D. Ulm whose telephone number is (571) 272-0880. The examiner can normally be reached on 9:00AM to 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on (571) 272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JOHN ULAN  
PATENT EXAMINER  
GROUP 1620